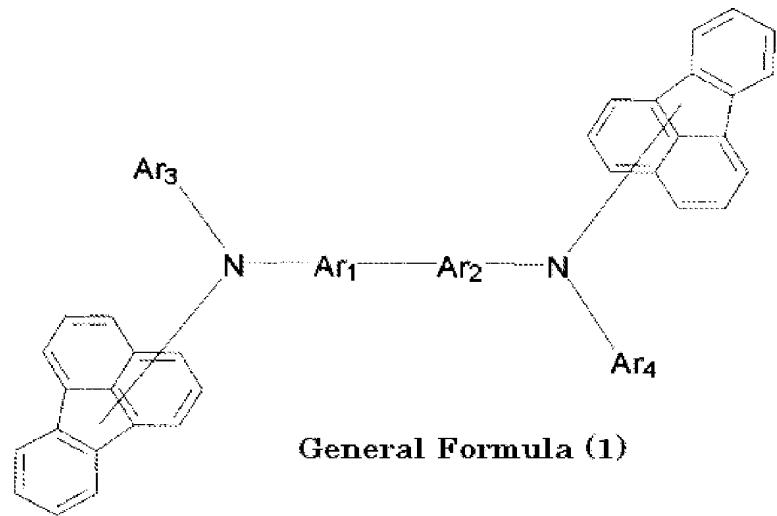


CALIMS

1. An organic electroluminescent element having a light emitting layer sandwiched between an anode and a cathode, characterized in that:

the light emitting layer contains a fluoranthene derivative represented by the following general formula (1) and emits a green light:



wherein in the general formula (1), each of two fluoranthenes may be independently substituted with hydrogen, an alkyl group having 6 or less carbon atoms, an alkoxy group having 6 or less carbon atoms, or an aryl group having 12 or less carbon atoms,

each of Ar₁ and Ar₂ independently represents an arylene group having 22 or less carbon atoms,

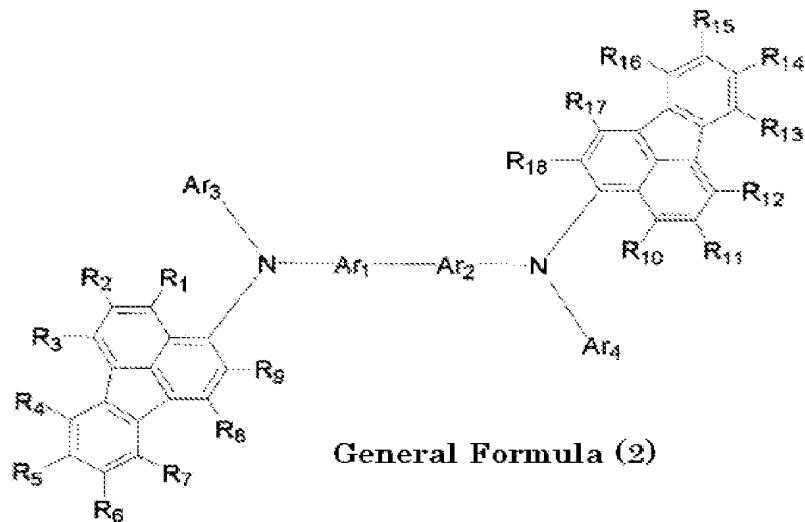
each of Ar₃ and Ar₄ independently represents an aryl group having 16 or less carbon atoms, and

in each aryl group and each arylene group, one hydrogen or a plurality of hydrogens may be replaced by an alkyl group or alkoxy group having 6 or less carbon atoms.

2. The organic electroluminescent element as described in claim 1, characterized

in that:

the fluoranthene derivative is represented by the following general formula (2):



wherein in the general formula (2), each of substituents R₁ to R₁₈ in two fluoranthenes independently represents hydrogen, an alkyl group having 6 or less carbon atoms, an alkoxy group having 6 or less carbon atoms, or an aryl group having 12 or less carbon atoms, and

in each aryl group, one hydrogen or a plurality of hydrogens may be replaced by an alkyl group or alkoxy group having 6 or less carbon atoms.

3. The organic electroluminescent element as described in claim 1, characterized in that:

in the general formula (1), each of Ar₁ and Ar₂ independently represents an arylene group having 14 or less carbon atoms, and

in the general formula (1) each of Ar₃ and Ar₄ independently represents an aryl group having 14 or less carbon atoms.

4. The organic electroluminescent element as described in claim 3, characterized in that:

each of the aryl group and arylene group in the fluoranthene derivative is derived from any one of benzene, naphthalene, anthracene, and biphenyl.

5. The organic electroluminescent element as described in claim 1, characterized in that:

concentration of the fluoranthene derivative in the light emitting layer is less than 50% by volume.

6. The organic electroluminescent element as described in claim 1, characterized in that:

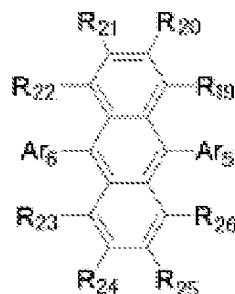
the light emitting layer contains an organic material having a fluorescence spectrum overlapping the absorption spectrum of the fluoranthene derivative.

7. The organic electroluminescent element as described in claim 6, characterized in that:

the organic material having a fluorescence spectrum overlapping the absorption spectrum of the fluoranthene derivative comprises an arylanthracene derivative.

8. The organic electroluminescent element as described in claim 7, characterized in that:

the arylanthracene derivative is represented by the following general formula (3):



General Formula (3)

wherein in the general formula (3), each of R₁₉ to R₂₆ independently represents

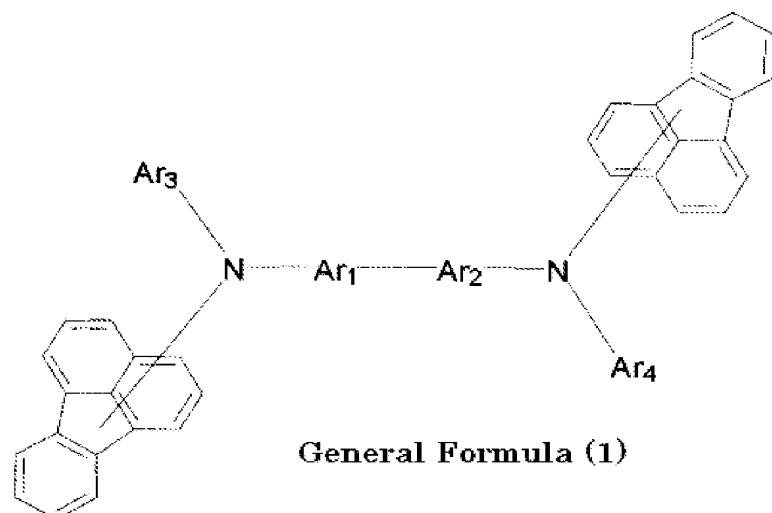
hydrogen, or an alkyl group or alkoxy group having 6 or less carbon atoms,

each of Ar₅ and Ar₆ independently represents an aryl group or ring assembly aryl group having 60 or less carbon atoms, and

in each aryl group or each ring assembly arylene group, one hydrogen or a plurality of hydrogens may be replaced by an alkyl group or alkoxy group having 12 or less carbon atoms, or a substituted or unsubstituted ethenyl group having 60 carbon atoms or less.

9. A display apparatus having a plurality of organic electroluminescent elements having a light emitting layer sandwiched between an anode and a cathode and being arranged on a substrate, characterized in that:

the light emitting layer contains a fluoranthene derivative represented by the following general formula (1):



wherein in the general formula (1), each of two fluoranthenes may be independently substituted with hydrogen, an alkyl group having 6 or less carbon atoms, an alkoxy group having 6 or less carbon atoms, or an aryl group having 12 or less carbon atoms,

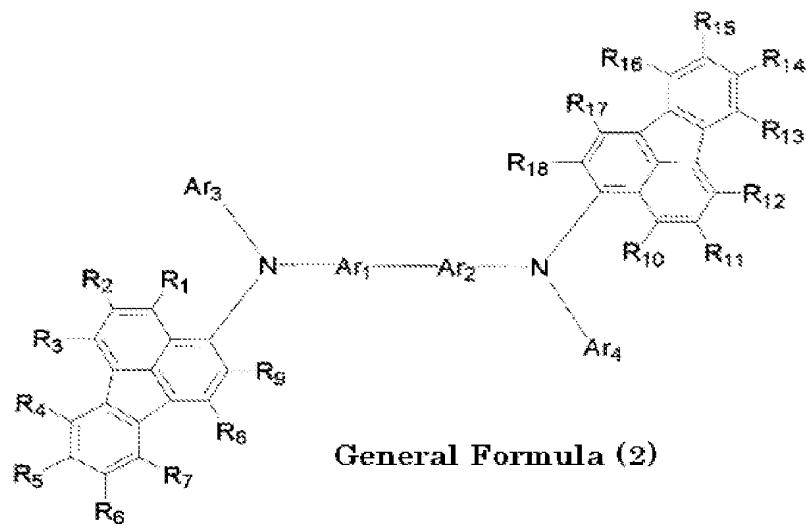
each of Ar₁ and Ar₂ independently represents an arylene group having 22 or less carbon atoms,

each of Ar₃ and Ar₄ independently represents an aryl group having 16 or less

carbon atoms, and

in each aryl group and each arylene group, one hydrogen or a plurality of hydrogens may be replaced by an alkyl group or alkoxy group having 6 or less carbon atoms.

10. The display apparatus as described in claim 9, characterized in that:
the fluoranthene derivative is represented by the following general formula (2):

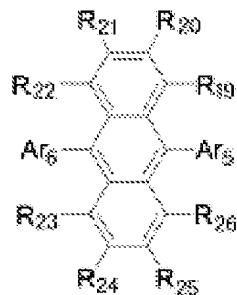


wherein in the general formula (2), each of substituents R₁ to R₁₈ in two fluoranthenes independently represents hydrogen, an alkyl group having 6 or less carbon atoms, an alkoxy group having 6 or less carbon atoms, or an aryl group having 12 or less carbon atoms, and

in each aryl group, one hydrogen or a plurality of hydrogens may be replaced by an alkyl group or alkoxy group having 6 or less carbon atoms.

11. The display apparatus as described in claim 9, characterized in that:
in the general formula (1), each of Ar₁ and Ar₂ independently represents an arylene group having 14 or less carbon atoms, and
in the general formula (1) each of Ar₃ and Ar₄ independently represents an aryl group having 14 or less carbon atoms.

12. The display apparatus as described in claim 11, characterized in that:
each of the aryl group and arylene group in the fluoranthene derivative is derived from any one of benzene, naphthalene, anthracene, and biphenyl.
13. The display apparatus as described in claim 9, characterized in that:
concentration of the fluoranthene derivative in the light emitting layer is less than 50% by volume.
14. The display apparatus as described in claim 9, characterized in that:
the light emitting layer contains an organic material having a fluorescence spectrum overlapping the absorption spectrum of the fluoranthene derivative.
15. The display apparatus as described in claim 14, characterized in that:
the organic material having a fluorescence spectrum overlapping the absorption spectrum of the fluoranthene derivative comprises an arylanthracene derivative.
16. The display apparatus as described in claim 15, characterized in that:
the arylanthracene derivative is represented by the following general formula (3):



General Formula (3)

wherein in the general formula (3), each of R₁₉ to R₂₆ independently represents hydrogen, or an alkyl group or alkoxy group having 6 or less carbon atoms,

each of Ar₅ and Ar₆ independently represents an aryl group or ring assembly aryl group having 60 or less carbon atoms, and in each aryl group or each ring assembly arylene group, one hydrogen or a plurality of hydrogens may be replaced by an alkyl group or alkoxy group having 12 or less carbon atoms, or a substituted or unsubstituted ethenyl group having 60 carbon atoms or less.

17. The display apparatus as described in claim 9, characterized in that:
the organic electroluminescent element is formed as a green light emitting element in a part of a plurality of pixels.